

GARRIGUES (H. J.)

COMPLIMENTS OF THE AUTHOR.

THE REMOVAL  
OF  
THE AFTER-BIRTH.

BY

HENRY J. GARRIGUES, A.M., M.D.

Obstetric Surgeon to the New York Maternity Hospital.

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*Reprinted from the AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN, Vol. XVII., No. 5, 1884.*

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## THE REMOVAL OF THE AFTER-BIRTH.

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It is now thirty years since Credé first published his views about the best way of treating the third stage of labor, and, since then, he has repeatedly returned to the same subject.<sup>1</sup>

The chief point in this method is that the placenta is not removed by traction from below, but by pressure from above. After the expulsion of the child, the accoucheur lays the whole hand gently on the region of the womb, and makes slight friction on as large a surface of the uterus as possible. When this organ is felt to contract, he seizes it with one or, preferably, both hands, spreading out the fingers over the posterior surface, and placing the thumbs in front, and when the contraction reaches its maximum, he presses the whole organ in the direction of the concavity of the sacrum. To press on the uterus when it is not contracted is a fault and has not the desired effect. An attempt is made to utilize the first after-pain for the expression; but, in most cases, the placenta does not come away before the third, or even the fourth. Each time, the same pressure is exercised on the uterus during the contraction, and, in the interval, the hand is kept on the womb, and if the contractions do not follow quick enough, it is used for rubbing that organ gently.

Some German authors<sup>2</sup> have of late years pretended that this

<sup>1</sup> Klinische Vorträge über Geburtshülfe, 1853, pp. 518-602.—Bericht über die Versammlung deutscher Naturforscher und Aerzte in Königsberg im Jahre 1860, in the Monatsschrift für Geburtshütung, vol. xvi., pp. 337-342, and 345.—*De optima in partu naturali placentam amovendi ratione.* Programma. Lipsiæ, 1860.—Ueber die zweckmässigste Methode der Entfernung der Nachgeburt; Monatsschrift für Geburtshütung, 1861, vol. xvii., p. 274, and Archiv für Gynäkologie, 1881, vol. xvii., pp. 260-280.

<sup>2</sup> Dohrn, in Deutsche Med. Wochenschr., 1880, No. 41; ibidem, 1883, No. 39; Runge, ibid., No. 44; Schultze, ibid., Nos. 51-52; Kabierske, Centralbl. f. Gyn., 1881, vol. v., p. 145; Ahlfeld: Berichte und Arbeiten aus der geburtshülflich-gynäkologischen Klinik zu Giessen, 1881-82.

method gives rises to several undesirable conditions, especially the retention of the membranes, or part of the placenta, hemorrhage, nay even puerperal fever.

Having been taught in younger years the old way of pulling on the cord in order to remove the secundines, I can testify to the great advantages presented by the modern method of squeezing them out by pressure on the uterus. I have practised this method during the last eight years; I introduced it in the Maternity Hospital as soon as I entered on duty there, and it has given perfect satisfaction. During my last two terms of service as visiting surgeon, the house surgeons (Drs. S. Pierson, F. K. Priest, R. Waldo, H. A. Leipziger, D. Pease, and A. Y. P. Garnett) have, at my request, kept a very exact record of everything bearing on this question. Four hundred and eight women were delivered. Two of them aborted respectively in the fifth and sixth month of utero-gestation, and the adherent placenta was in both cases removed piece-meal by myself, by means of the large dull wire curette and forceps. Among the remaining four hundred and six women delivered more or less at full term, there were six cases of retained placenta. In other words, in four hundred cases the placenta was expressed by Crede's method, and in six only—that is, one and one-half per cent of all—the method failed.

CASE I.—*Adherent Placenta* (accoucheur : Dr. Samuel Pierson). Ellen C., aet. thirty-nine, married, delivered October 19th, 1882. It was a premature delivery, the utero-gestation having lasted about eight months. The labor was normal up to the third stage. Credé's method was used to no avail. At the end of one hour and three-quarters, the placenta was removed by means of the hand in the uterus. A part of the placenta was protruding through the os, and, on following the cord up, the remaining part was found attached at the fundus, whence it was with great difficulty dissected off. After removal, the placenta was found to be small, very thin, flabby, and made up of two distinct parts joined by an intervening part of the membranes. Recovered.

CASE II.—*Adherent Placenta. Ante-partum hemorrhage* (accoucheur: Dr. S. Pierson). Nellie S., aet. twenty-four, single, second pregnancy. She gave a history of three or four slight hemorrhages during her pregnancy. On October 22d, 1882, she had a severe hemorrhage by which she lost fully sixteen ounces of blood, and which was only checked by tamponade. In the afternoon of the same day, she was delivered of a still-born male child weighing eight pounds and six ounces.

The uterus contracted very poorly. There were no after-pains. Pulse 150; respiration 50. The placenta having failed to come away, the doctor, at the end of one hour and a half, introduced his hand and dissected it off from the uterine wall, to which it was very intimately adherent. At the time of its removal it had a distinct odor of decomposition. She died of exhaustion on the same day.

CASE III.—*Adherent Placenta* (accoucheur: Dr. S. Pierson). Mary R., æt. thirty-five. Fifth pregnancy. Breeeh presentation. Very large child. The placenta failed to come off despite the use of Credé's method. At the end of two hours, Dr. P. introduced with great difficulty his hand into the uterus. The placenta was found intimately adherent to the right corner, whence it was dissected off with great difficulty, and at length it was delivered very much mutilated. The uterus was then washed out with two-percent hot carbolized water. Her condition was very bad, but she rallied quite well under the use of hot bottles, stimulants, and morphia. The next day when I saw her, her condition was comparatively good. As it was uncertain if all had been removed, I had her etherized and introduced the hand up to the fundus, but found the walls entirely smooth. She had a slight parametritis, and made an excellent recovery.

CASE IV.—*Retained Placenta. Post-partum hemorrhage* (accoucheur: Dr. H. A. Leipziger). Josephine S., primipara, delivered November 30th, 1883. Repeated efforts by Credé's method having failed, and the patient being anemic and losing considerable blood from oozing and the expulsion of clots, the hand was introduced into the uterus, and the edge of the placenta found at one and one-half inches above the external os. It was delivered one hour and ten minutes after the birth of the child, and a hot intrauterine douche of bichloride of mercury solution (1 : 2,000) was given. After that no trouble.

CASE V.—*Precipitate labor. Post-partum hemorrhage. Retained placenta* (accoucheur: Dr. Leipziger). Margaret G. Tenth pregnancy. Delivered November 5th, 1883. Child born precipitately while the patient was at stool. She lost considerable blood by expulsion of clots and a gush of fluid blood. Placenta not coming off by pressure, two fingers were introduced into the uterus and the placenta removed. Patient remained weak and pallid for some time, but otherwise the convalescence was normal.

CASE VI.—*Adherent Placenta* (accoucheur: Dr. D. Pease). Regina G. Third pregnancy. Delivered December 18th, 1883. Pains stopped. Easy low forceps delivery. It was not possible to excite uterine contraction by Credé's method, wherefore the hand was introduced into the uterus one hour and fifteen minutes after the delivery of the child, and the placenta, which adhered to the posterior wall, separated with considerable difficulty. Intrauterine injection of bichloride of mercury (1 : 2,000). Normal lying-in period.

In four of these cases, there existed an abnormally intimate connection between the placenta and the uterus, so that it may be taken for granted that no amount of pulling on the cord would have brought the after-birth away. These cases of true adhesion of the placenta are of rare occurrence, and the supposed frequency of retained placenta is probably in most cases due to improper maneuvres or undue haste on the part of the accoucheur. By the use of the method recommended in this paper, the frequency of such cases will dwindle down to a small fraction. In two cases only out of four hundred, or in one-half per cent, Credé's method failed to bring the placenta out, although it was not adherent, but merely retained.

In six cases, or one and a half per cent, more or less large shreds of membranes were retained. In one of them the whole hand was introduced into the uterus, in order to remove them; in the other five cases the introduction of the index and middle fingers sufficed for this purpose, and no trouble was observed in consequence of this procedure.

Credé<sup>1</sup> says that he has not seen any bad consequences of leaving the membranes in the uterus, and that the introduction of the hand for their removal might cause infection. He advises, therefore, to leave them alone. Having myself seen very serious post-partum hemorrhage occur in such cases, which was checked as soon as the uterus was emptied, I have made it a rule for myself and my pupils to remove retained parts of the after-birth in all cases. By thoroughly disinfecting the hand, and following the removal of the membranes up by an intra-uterine antiseptic injection, I have never seen any bad results, and I take the danger of infection under these circumstances to be smaller than that of hemorrhage and infection by leaving parts of the secundines behind. Formerly we used carbolic acid, a five-per-cent solution for the hand and a two-per-cent for the uterus, but since October 1st, 1883, when I introduced the bichloride of mercury treatment in the Maternity Hospital,<sup>2</sup> we have exclusively used the latter drug in a solution of 1 to 2,000. In no case was any part of the placenta retained.

Credé's method recommends itself by being modeled on the

<sup>1</sup> Arch. f. Gynäk., 1881. Vol. vii., p. 278.

<sup>2</sup> Garrigues : The Prevention of Puerperal Infection, New York Medical Record, 1883, xxiv., p. 703 et seq.

natural course of labor. It helps Nature by employing her own means. All it does is to increase the strength of the normal contractions of the uterus by which the placenta is expelled. In some rare cases we see this expulsion follow instantaneously after that of the child, but in the majority of cases, after the strong contractions at the end of the second stage, there is some atony of the womb. More or less long time intervenes before the placenta is thrown off; in some cases a more or less considerable amount of blood collects in the membranes, which are finally pushed out as a bag full of clots and fluid blood, and in not a few it does not come off at all. In the large majority of cases there is therefore a call for artificial help, and then Credé's method comes in as the one that so to say works in the spirit of Nature.

In the natural process the placenta is expelled by the contraction of the muscles of which the womb is composed. This organ forms a sac with the mouth turned downward and backward, and is only attached in its lower part. The bundles which enter in its composition may be divided into two groups, which may be called the proper and the common muscular bundles. The first form the bulk of the different layers of which the womb is composed. They accomplish only a concentric movement of the walls against one another and approximate the fundus to the mouth. The second comprise the bundles which find a fixed point of insertion on the bony parts of the pelvis. Above and in front we have the round ligaments, so called, which during pregnancy become almost as thick as the little finger, send a thick loop up over the fundus, and are attached below to the spine of the pubis. In front and below bundles pass from the cervix on both sides of the bladder to the pubic bone.<sup>1</sup> Behind, the so-called utero-sacral ligaments run from the level of the internal os to the anterior surface of the third and fourth sacral vertebra. On both sides we find the large muscular expansions which form a great part of the broad ligaments, and starting from the edge of the uterus, insert themselves on the side walls of the pelvis.

Through the contraction of this second group of muscular bundles the uterus is drawn downwards into the pelvic cavity, and at the same time tilted in such a way that the fundus

<sup>1</sup> Thévenot: Journ. Obstet., 1882. Supplement, p. 216.

moves forward, the cervix backward. This tilting is due to the co-operation of the round and the utero-sacral ligaments, while all the lower bundles probably contribute to the expansion of the internal os.

All these different movements are closely imitated by Credé's method. Through the pressure of the thumbs and the fingers, the walls of the uterus are from all sides brought nearer to one another, and thus the area covered by the placenta becomes diminished. On the other hand, the pressure on the well-contracted fundus pushes the whole organ backward and downward toward the hollow of the sacrum, and at the same time presses the detached placenta against the inner os, mechanically helping to open it.

Besides this purely mechanical effect, the compression of the muscular bundles works in a dynamic way, by increasing the power of the natural contraction, especially that of the fundus.

By shortening the duration of the third stage of labor, and by increasing muscular contraction, Credé's method counteracts hemorrhage, both immediately during the third stage and after the end of labor. During the period referred to, we had among four hundred and eight patients only two cases of post-partum hemorrhage besides the two mentioned above (IV. and V.), in which a moderate amount of blood was lost.

CASE VII.—(Accoucheur: Dr. F. K. Priest.) Susan G., æt. twenty-three. Third pregnancy. Delivered on December 11th, 1882. Breech presentation, with the sacrum turned backwards and to the right. When she had been in labor twenty-three hours, and was somewhat exhausted, a foot was brought down and a still-born male child weighing ten pounds and fifteen ounces extracted. The perineum was ruptured to the anus. The delivery of the child was followed by a profuse hemorrhage. The hand was again introduced into the uterus, and everything cleaned out. At the same time it was grasped and compressed through the abdominal wall. The uterus was washed out with hot two-per-cent carbolized water. Besides, ergotine, brandy, and digitalis were given hypodermically. The hemorrhage stopped, and the uterus contracted well. Later she became affected with diphtheritic inflammation of the genitals and died of septicemia.

CASE VIII.—(Accoucheur: Dr. Garrigues.) Kate R., æt. twenty-three, delivered February 14th, 1883. She suffered from nephritis with uremia and purpura hemorrhagica. Her urine contained large granular casts. She had severe headache, vom-

ited continually, and suffered very much without having any real labor pains.

A slight erythema had been noticed in the groins on the previous day. Since then it spread and changed character. The whole abdomen up to the ensiform proces was the seat of a uniform rose-colored erythema which disappeared on pressure. But interspersed in the erythema were found purple or blue spots from the size of a pin's head to a pea, which did not change on pressure. The eruption extended three fingers' breadth down the inner surface of the thighs. It was less marked on the thorax, but became again much more pronounced on the neck, whence it even extended over the posterior surface of the body. Petechiae were likewise found in both axillæ, on the mammae, and on the back. In both eyes were large ecchymoses.

She was delivered, by version, of a dead child. Considerable hemorrhage following immediately after the extraction, the hand was introduced into the uterus, and the placenta removed without any difficulty. A hot intrauterine injection was given, and the hemorrhage stopped. She fainted, was revived, but died three hours later.

In both these cases, hemorrhage came on immediately after the birth of the child, before Credé's method could be practised; both patients were exhausted, and the latter had blood extravasations all over the body. We have not had a single post-partum hemorrhage occurring after the expression of the placenta.

When properly executed, Credé's method of expressing the placenta is the best prevention of post-partum hemorrhage.

Inversion of the womb, which is favored by pulling on the cord, is powerfully counteracted by the method recommended; but it cannot be repeated too often that the womb is seized from *all* sides and over *the largest possible space*, that the pressure is chiefly exercised so as to *press wall against wall*, and that the downward pressure on the fundus must never be practised except *when the womb is contracted*.

The fearful avulsion of the whole uterus by pulling on the cord, of which more than one case has been reported, becomes, of course, impossible, when the placenta is removed by pressure from above.

In some cases, the whole after-birth is expelled outside the genitals, but in most only the placenta itself with the larger part of the membranes are expelled. By turning the placenta, the membranes are made to form a kind of cord, and by gentle pulling on this, always seizing it as near up to the vulva as possible, it is easily withdrawn from the vagina without introduc-

ing the fingers into the canal. In this way the expression of the placenta becomes even a part of prophylactic antiseptic treatment.

Although I deliver the patient by the so-called London method, that is to say, in the left side position, which I think has several important advantages over the dorsal decubitus commonly used in this country, as well as on the continent of Europe, after the birth of the child, I turn her over on her back, in which position the *expression* is performed much better. The accoucheur stands in a much freer attitude, and can use both his hands on the womb, which by gravitation, sinks down in the most favorable direction for the expulsion of the placenta. Should hemorrhage supervene, the dorsal posture is likewise preferable with regard to the compression of the aorta, and intrauterine injections.

In his last communication, Credé states that in two thousand deliveries, the average duration of the third stage was only four and a half minutes. In our experience it was considerably longer, but this is easily explained when we remember that in the European clinics the same assistant occupies his place for a long time, and thereby acquires the courage and skill necessary for the early removal of the after-birth, while in our Maternity Hospital a new house-surgeon goes on duty every two months. But in my opinion it is of subordinate importance whether the third stage is allowed to last some minutes more or less. In my own practice it occupies commonly fifteen or twenty minutes. The chief point is that the uterus all the time be prevented from undue relaxation, that very little blood be allowed to accumulate, and that the placenta be removed by pressure.

The assertion that the expression of the placenta should cause puerperal fever is effectually refuted by my experience, as well as by that of others, *e. g.*, Breisky's clinic. Since the introduction of the bichloride of mercury treatment, two hundred and sixteen women were delivered. There was only one case of puerperal fever, which was easily explained by the circumstance that the patient was delivered at the same time as another who brought forth a macerated child and a stinky placenta, and the accoucheur who had care of the latter case, had unfortunately been allowed to examine the former. Even

other forms of inflammation and fever had been exceedingly rare. The details for the first three months are found in the above-mentioned article on "Prevention of Puerperal Infection," and during the next three months, a similar healthy condition prevailed in the hospital.

Crédé's originality has been impugned, especially by some of his own countrymen, who assert that the same measures were recommended and practised before him by English (Scotch and Irish) accoucheurs. I have, therefore, examined all the older authors whose works are found in the New York Hospital Library, a full score in number. Some of them (Smellie, Charles White, "Edinburgh Practice," and Gooch) recommend exclusively to remove the placenta by pulling on the cord, except when it becomes necessary to introduce the hand into the uterus, and they do not mention any kind of rubbing or pressure. A second and larger class (R. W. Johnson, David Spence, Hamilton, Merriman, Samuel Bard, of New York, Thomas Denman, Blundell, Charles D. Meigs, of Philadelphia, Robert Collins, Edward Rigby, Francis H. Ramsbotham, Fleetwood Churchill, and David H. Tucker, of Philadelphia) combine pulling on the cord with rubbing or pressure on the abdominal wall and kneading of the uterus, but with them all this latter procedure is only mentioned as a help; all of them remove the placenta finally by traction on the cord or the placenta itself.

A third class, finally, is formed by Johnston, Sinclair,<sup>1</sup> and Murphy,<sup>2</sup> all formerly assistant physicians in the Dublin Lying-in Hospital, who describe the mode of delivery used in that institution. They show how the uterus is "followed down" by pressure on the fundus during the delivery of the child, how the contraction is kept up after the birth of the child by never leaving the uterus out of the hand, how friction and pressure are used, and state that these measures are often sufficient to expel the placenta out of the vagina; but at the same time they speak of *putting the cord on the stretch, hooking the fingers into the rugosities formed by the umbilical vessels, and*

<sup>1</sup> Johnston and Sinclair: Practical Midwifery, comprising an account of 13,748 deliveries, which occurred during a period of seven years, commencing November, 1847. London, 1858.

<sup>2</sup> Edw. Wm. Murphy: Lectures on Natural and Difficult Parturition New York, 1846.

*drawing on the funis.* Thus not even the so-called Dublin method comes up to Credé's, the distinctive features of the latter being, 1st, that it is used in all cases; 2d, that the uterus is grasped from all sides with both hands; 3d, that the placenta is squeezed out by a decided pressure during the uterine contraction; 4th, that the cord and placenta never are touched, except in those rare cases in which the placenta is really adherent, and has to be peeled off from the uterine wall; and 5th, that the fingers are not introduced into the genital canal after delivery, at which time the danger of infection is much greater than before the passage of the child.

The advantages of this method are, 1st, the certitude with which the aim is attained; 2d, the exact imitation of natural processes; 3d, the prevention of hemorrhage; 4th, the prevention of hour-glass contraction; 5th, the prevention of inversion; 6th, the prevention of avulsion of the cord or the uterus; and 7th, the prevention of infection.

The method of expression has several modifications, for the details of which the reader is referred to Dr. Mundé's article on the "Diagnosis and Treatment of Obstetric Cases by External Manipulation" (JOURNAL OF OBSTETRICS, 1880, Vol. XII., p. 361 et seq.).

I need not say anything about the old method of pulling on the cord, because to all the advantages claimed for Credé's method correspond disadvantages in the former.

The third method in use, if it can so be called, is the absolute abstention from any kind of interference as practised, *e. g.*, in Strassburg.<sup>1</sup>

In normal labors, they do not even lay their hands on the abdomen, and do not remove the placenta even if it lies entirely detached in the vagina. This method offers all the advantages and limits of an experiment. It teaches us, what otherwise we might ignore, how the third stage of labor takes place in a civilized woman lying in bed in a hospital. In a hundred cases treated in this way, the placenta twenty-four times came off within half an hour, twenty times within the second half-hour, twenty-five times in the second hour, eleven

<sup>1</sup> Kabierske: Beitrag zur Frage über die Behandlung der Nachgeburtperiode, in Centralblatt für Gynäkologie, 1881, No. 7, vol. v., p. 145 et seq.

times in the third hour, nine times in the fourth, five times in the fifth, three times in the sixth, twice in the eighth, and once in the twelfth hour. In every case, the fetal surface appeared first in the os and in the vulva. The membranes formed a bag filled with a rather large quantity of blood. The decidua formed a thick, succulent membrane, which commonly was pervaded by numerous blood-vessels. Twice hour-glass contraction was observed. In one case, a decided putrid odor was perceived.

Apart from the experimental interest, I fail to see a single advantage in this method. It does not even give a correct idea of what would take place under natural circumstances. By the recumbent position in bed, the placenta is artificially prevented from coming off as early as it otherwise would. If we imagine a woman giving birth to a child lying or squatting under a tree, in the open air, it is all but sure that she would not lie for many hours on her back. After a short rest, she would be likely to get up, and the placenta, which, by uterine contraction, had been cast off from the inside of the womb, and pushed more or less completely out into the vagina, would drop out by its own weight, and draw the membranes after it.

Dr. Engelmann,<sup>1</sup> of St. Louis, in summing up his comprehensive study of the obstetric practice of savage people, says: "The placenta usually follows the child, but unless this is the case *massage and expression are invariably resorted to.*"

Nay, even some animals seem to use similar procedures when circumstances permit. Dr. Sussdorff,<sup>2</sup> of this city, in a most interesting paper on the birth of an elephant, described how that sagacious animal, after the escape of the baby, placed her abdomen upon a short post in the ground, to which she was chained, standing almost upon her head, and grasping the post with her trunk, thus forcing the abdomen with great power against the post for about ten minutes. This is not exactly Credé's method, for the placenta was not expelled before an hour and a half after the birth of the little one; but, on the other hand, it is certainly a recourse to an artificial means of increasing uterine contraction.

<sup>1</sup> Geo. J. Engelmann: *Massage and Expression in Primitive Obstetric Practice.* *AM. JOURN. OBST.*, 1882, vol. xv., p. 622.

<sup>2</sup> *New York Med. Jour.*, 1882, vol. xxxvi., p. 22 et seq.

In spite of the good results obtained in the small number of cases reported by Kabierske, I do not think they in any way are sufficient to remove the apprehension of dangerous consequences of non-interference which has prompted humanity to watch and abridge the third stage of labor, and to surround it with particular precautions. As it is, we see that hour-glass contraction occurred twice in one hundred cases, while in Maternity Hospital we had none in more than four times as many cases which I have used for this paper. The risk of hemorrhage is evident, since experience on a much greater scale has proved that it occurs much oftener in those cases in which compression of the womb is not used than in those in which it is resorted to, and since emptying and compressing the uterus when hemorrhage actually sets in proves such an excellent remedy, I need hardly point out that it is dangerous to leave the detached placenta inside the genitals until it stinks. Upon the whole, in a country like this, where confinement cases, fortunately, in a large measure are in the hands of physicians, I do not think it very likely that the method should win many adherents. The accoucheur is glad to get away from a place where he has been detained for hours. He will scarcely allow himself to be retained by some decidua cells, which experience has shown come off quite as innocently in the lochial discharge as if expelled together with the bulk of the membranes. All that is required is that he should abridge the third stage in such a way as not to expose the patient to any danger, and that is best done by Credé's method. Of the three systems now followed in different lying-in asylums, that is the one I think ought always first to be tried. In very exceptional cases, that of pulling on cord or placenta may be required, while total expectancy has many disadvantages and hardly any redeeming qualities.







